Amendments to the Claims

This Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for the fabrication of a plurality of particulate materials, comprising the steps of:

a) continuously providing a precursor composition to a reactor;

b) continuously reacting said precursor composition in said reactor under at least one reactor condition to form reacted precursor particles ~~in a~~ that are dispersed ~~state~~in a gas; and

c) collecting said reacted precursor particles, wherein said precursor composition is varied in a controlled manner and on a real-time basis such that said reacted precursor particles comprise a first reacted precursor portion at a first time and a second reacted precursor portion at a second time and at least one material property of said first reacted precursor portion is different than said one material property of said second reacted precursor portion and said reacted precursor particles are collected in a controlled manner wherein said first reacted precursor portion and second reacted precursor portion can be separately identified and tested for said material property.

2. (Currently Amended) A method as recited in Claim 1, wherein said precursor composition is varied on a real time basis during said providing step and wherein said first reacted precursor portion has a different chemical composition than said second reacted precursor portion.

3. (Original) A method as recited in Claim 1, wherein said at least one reactor condition is varied on a real-time basis.

4. (Original) A method as recited in Claim 1, wherein said at least one reactor condition is reactor temperature and said reactor temperature is varied on a real-time basis.

5. (Original) A method as recited in Claim 1, wherein said precursor composition comprises at least a first precursor component and a second precursor component and wherein the concentration of at least one of said first and second precursor components in said precursor composition is varied on a real-time basis.

6. (Original) A method as recited in Claim 1, wherein said precursor composition comprises at least a first precursor component and a second precursor component and wherein the concentration of at least one of said first and second precursor components in said precursor composition is varied on a real-time basis at a rate of from about 0.1 weight percent per minute to about 10 weight percent per minute.

7. (Original) A method as recited in Claim 1, wherein said precursor composition comprises a flowable liquid.

8. (Currently Amended) A method as recited in Claim 1, wherein said precursor composition comprises a flowable liquid and said step of providing a precursor composition comprises ~~dispersing~~ generating precursor droplets comprising said precursor composition ~~to form dispersed droplets~~.

9. (Original) A method as recited in Claim 1, wherein said precursor composition is a substantially dry powder.

10. (Original) A method as recited in Claim 1, wherein said reactor is a hot wall reactor.

11. (Original) A method as recited in Claim 1, wherein said reactor is a plasma reactor.

12. (Original) A method as recited in Claim 1, wherein said reactor is a flame reactor.

13. (Previously Presented) A method as recited in Claim 1, wherein said collecting step comprises collecting said first reacted precursor portion at a first location on a substrate and collecting said second reacted precursor portion at a second location on said substrate.

14. (Original) A method as recited in Claim 1, further comprising the step of heating said reacted precursor particles after said collecting step.

15. (Original) A method as recited in Claim 1, wherein said collecting step comprises depositing said reacted precursor on a substrate to form a linear feature comprising said reacted precursor particles and including said first reacted precursor portion and said second reacted precursor portion.

16. (Original) A method as recited in Claim 1, wherein said collecting step comprises depositing said particles on a substrate by ejecting said particles through a nozzle.

17. (Original) A method as recited in Claim 1, wherein said collecting step comprises depositing said particles on a substrate by ejecting said particles through a nozzle onto a continuously moving substrate.

18. (Original) A method as recited in Claim 1, wherein said precursor composition comprises at least a first precursor component and a second precursor component and wherein said reacted precursor particles are composite particles.

19. (Original) A method as recited in Claim 1, wherein said particulate materials comprise inorganic compounds.

20. (Original) A method as recited in Claim 1, wherein said particulate materials comprise organic compounds.

21. (Original) A method as recited in Claim 1, wherein said precursor composition comprises a monomer and said reacted precursor particles comprise a polymer.

22. (Original) A method as recited in Claim 1, wherein said particulate materials comprise metal alloys.

23. (Original) A method as recited in Claim 1, wherein said particulate materials comprise metal solder alloys.

24. (Original) A method as recited in Claim 1, wherein said particulate materials comprise unsupported electrocatalyst materials.

25. (Original) A method as recited in Claim 1, wherein said particulate materials comprise supported electrocatalyst materials.

26. (Original) A method as recited in Claim 1, wherein said particulate materials comprise pharmaceutical compositions.

27. (Original) A method as recited in Claim 1, wherein said particulate materials comprise phosphor compounds.

28. (Original) A method as recited in Claim 1, wherein said reacted precursor particles have an average particle size of from about 1 nm to about 100 μm.

29. (Original) A method as recited in Claim 1, wherein said reacted precursor particles have an average particle size of from about 5 nanometers to about 1 μm.

30. (Original) A method as recited in Claim 1, wherein said reacted precursor particles have an average particle size of from about 0.5 μm to about 10μm.

31. (Currently Amended) A method for the fabrication and analysis of particulate materials, comprising the steps of:

a) providing a precursor composition comprising at least a first precursor component and a second precursor component to a reactor, wherein at least one of said first and second precursors is a precursor to a metal or metal compound;

b) continuously reacting said precursor composition under at least a first reactor condition to form reacted precursor particles wherein said reactor condition is varied in a controlled manner and on a real-time basis such that said reacted precursor particles comprise a first reacted precursor portion at a first time and a second reacted precursor portion at a second time and at least one material property of said first reacted precursor portion is different than said one material property of said second reacted precursor portion; and

c) analyzing said first reacted precursor portion and said second reacted precursor portion for said at least one material property.

32. (Original) A method as recited in Claim 31, wherein said reactor condition is reaction temperature.

33. (Original) A method as recited in Claim 31, wherein said reactor condition is reaction temperature and wherein said reaction temperature is varied at a rate of from about 0.5ºC/min to about 10ºC/min.

34. (Original) A method as recited in Claim 31, wherein said precursor composition comprises volatile precursors and wherein said volatile precursors are volatilized to react in a gaseous phase.

35. (Original) A method as recited in Claim 31, wherein said first precursor component and said second precursor component are gas phase precursors.

36. (Original) A method as recited in Claim 31, wherein said reacting step comprises the step of heating said precursor composition.

37. (Original) A method as recited in Claim 31, wherein said reaction step occurs in a hot wall reactor.

38. (Original) A method as recited in Claim 31, wherein said reaction step occurs in a flame reactor.

39. (Original) A method as recited in Claim 31, wherein said reaction step occurs in a plasma reactor.

40. (Original) A method as recited in Claim 31, wherein said method further comprises the step of collecting said reacted precursor particles on a substrate and analyzing said reacted precursor particles on said substrate.

41. (Original) A method as recited in Claim 31, wherein said reacted precursor portion is collected at a first predetermined location on a substrate and said second reacted precursor portion is collected at a second predetermined location on said substrate.

42. (Original) A method as recited in Claim 31, wherein said reacted precursor particles are collected in a substantially continuous manner on a substrate to form a linear feature having a compositional gradient and wherein said analyzing step comprises analyzing said linear feature.

43. (Original) A method as recited in Claim 31, wherein said analyzing step comprises continuously analyzing said reacted precursor particles as said particles exit said reactor.

44. (Currently Amended) A method for selecting a particulate material having a desired property, comprising the steps of:

a) continuously providing a precursor composition to a reactor in the form of precursor droplets dispersed in a carrier gas;

b) reacting said dispersed precursor droplets in a heated reactor while dispersed in the carrier gas under at least one reactor condition to form reacted precursor particles dispersed in said carrier gas; and

c) measuring at least one material property of said reacted precursor particles while said reacted precursor particles are dispersed in said carrier gas, wherein at least one of said precursor composition and said reactor condition is varied on a real-time basis such that said reacted precursor particles comprise first reacted precursor particles at a first time and second reacted precursor particles at a second time and at least one material property of said first reacted precursor particles is different than said one material property of said second reacted precursor particles.

45. (Original) A method as recited in Claim 44, wherein said measuring step comprises measuring the aerodynamic diameter of said reacted precursor particles.

46. (Original) A method as recited in Claim 44, wherein said measuring step comprises measuring a magnetic property of said reacted precursor particles.

47. (Original) A method as recited in Claim 44, wherein said reacted precursor particles comprise pharmaceutical particles.

48. (Currently Amended) A method for the continuous fabrication of a plurality of particulate electrocatalyst compositions, comprising the steps of:

a) providing a precursor to an electrocatalyst composition comprising at least a first precursor component and a second precursor component;

b) dispersing said precursor into precursor droplets;

~~b~~c) reacting said precursor droplets while dispersed in a carrier gas to form a particulate reacted precursor; and

~~c~~d) collecting said particulate reacted precursor, wherein said step of providing a precursor composition comprises controllably changing said precursor composition during the fabrication method such that said reacted precursor composition comprises at least a first electrocatalyst composition at a first time and a second electrocatalyst composition at a second time.

49. (Original) A method as recited in Claim 48, wherein at least one of said first and second precursor components is a precursor component in solution.

50. (Original) A method as recited in Claim 48, wherein at least one of said first and second precursor components comprises a particulate solid in suspension.

51. (Original) A method as recited in Claim 48, wherein said precursor comprises gas phase reactants.

52. (Original) A method as recited in Claim 48, wherein said step of controllably changing said electrocatalyst composition comprises controllably varying the ratio of said first precursor component to said second precursor component.

53. (Original) A method as recited in Claim 48, further comprising the step of dispersing said precursor into precursor droplets before said reacting step.

54. (Original) A method as recited in Claim 48, wherein said reacting step comprises heating said precursor.

55. (Original) A method as recited in Claim 48, wherein said collecting step comprises depositing said reacted precursor on a substrate.

56. (Original) A method as recited in Claim 48, wherein said collecting step comprises depositing said precursor in a substantially continuous manner on a substrate to form a linear feature having a compositional gradient.

57. (Original) A method as recited in Claim 48, wherein said electrocatalyst compositions comprise metal-carbon composites.

58. (Original) A method as recited in Claim 48, wherein said first precursor component comprises a metal precursor and said second precursor component comprises a carbon precursor and wherein said step of controllably changing said electrocatalyst composition comprises changing the ratio of said metal precursor to said carbon precursor.

59. (Original) A method as recited in Claim 48, wherein said electrocatalyst composition comprises a perovskite phase metal oxide.

60. (Original) A method as recited in Claim 48, wherein said electrocatalyst composition comprises a perovskite phase oxide including at least a first metal and a second metal and wherein said first precursor component comprises a first metal precursor and said second precursor component comprises a second metal precursor and wherein said step of controllably changing said electrocatalyst composition comprises changing the ratio of said first metal precursor to said second metal precursor.

61. (Currently Amended) A method for the continuous fabrication of a plurality of pharmaceutical particles, comprising the steps of:

a) providing a precursor to a pharmaceutical composition comprising at least a first pharmaceutically-active precursor component and a second precursor component;

b) generating precursor droplets from said precursor; and

c) reacting said precursor droplets while said droplets are dispersed in a carrier gas to form pharmaceutical particles, wherein said step of providing a precursor composition comprises controllably changing said pharmaceutical composition during the fabrication method such that said pharmaceutical composition comprises at least a first pharmaceutical composition at a first time and a second pharmaceutical composition at a second time.

62. (Original) A method as recited in Claim 61, wherein said method further comprises the step of measuring the aerodynamic diameter of said reacted precursor particles.

63. (Original) A method as recited in Claim 61, wherein said step of providing a precursor composition comprises the step of changing the concentration of at least one of said first and second precursor components.

64. (Currently Amended) A method for the fabrication of a plurality of particulate materials, comprising the steps of:

a) continuously providing a precursor composition ~~to a reactor~~ comprising at least first and second precursor compounds;

b) moving said precursor composition to a reactor;

~~b~~c) continuously reacting said precursor composition in said reactor under at least one reactor condition to form reacted precursor particles; and

~~c~~d) collecting said reacted precursor particles, wherein said precursor composition is varied in a controlled manner and on a real-time basis such that said reacted precursor particles comprise a first reacted precursor portion at a first time and a second reacted precursor portion at a second time and at least one material property of said first reacted precursor portion is different than said one material property of said second reacted precursor portion, wherein said precursor composition is varied on a real time basis and said first reacted precursor portion has a different chemical composition than said second reacted precursor portion.

65. (Previously Presented) A method as recited in Claim 64, wherein said at least one reactor condition is varied on a real-time basis.

66. (Previously Presented) A method as recited in Claim 64, wherein said at least one reactor condition is reactor temperature and said reactor temperature is varied on a real-time basis.

67. (Previously Presented) A method as recited in Claim 64, wherein said precursor composition comprises at least a first precursor component and a second precursor component and wherein the concentration of at least one of said first and second precursor components in said precursor composition is varied on a real-time basis.

68. (Previously Presented) A method as recited in Claim 64, wherein said

precursor composition comprises at least a first precursor component and a second precursor component and wherein the concentration of at least one of said first and second precursor components in said precursor composition is varied on a real-time basis at a rate of from about 0.1 weight percent per minute to about 10 weight percent per minute.

69. (Previously Presented) A method as recited in Claim 64, wherein said precursor composition comprises a flowable liquid.

70. (Previously Presented) A method as recited in Claim 64, wherein said precursor composition comprises a flowable liquid and said step of providing a precursor composition comprises dispersing said precursor composition to form dispersed droplets.

71. (Previously Presented) A method as recited in Claim 64, wherein said precursor composition is a substantially dry powder.

72. (Previously Presented) A method as recited in Claim 64, wherein said reactor is a hot wall reactor.

73. (Previously Presented) A method as recited in Claim 64, wherein said reactor is a plasma reactor.

74. (Previously Presented) A method as recited in Claim 64, wherein said reactor is a flame reactor.

75. (Previously Presented) A method as recited in Claim 64, wherein said collecting step comprises collecting said first reacted precursor portion at a first location on a substrate and collecting said second reacted precursor portion at a second location on said substrate.

76. (Previously Presented) A method as recited in Claim 64, further comprising the step of heating said reacted precursor particles after said collecting step.

77. (Previously Presented) A method as recited in Claim 64, wherein said collecting step comprises depositing said reacted precursor on a substrate to form a linear feature comprising said reacted precursor particles and including said first reacted precursor portion and said second reacted precursor portion.

78. (Previously Presented) A method as recited in Claim 64, wherein said

collecting step comprises depositing said particles on a substrate by ejecting said particles through a nozzle.

79. (Previously Presented) A method as recited in Claim 64, wherein said collecting step comprises depositing said particles on a substrate by ejecting said particles through a nozzle onto a continuously moving substrate.

80. (Previously Presented) A method as recited in Claim 64, wherein said precursor composition comprises at least a first precursor component and a second precursor component and wherein said reacted precursor particles are composite particles.

81. (Previously Presented) A method as recited in Claim 64, wherein said particulate materials comprise inorganic compounds.

82. (Previously Presented) A method as recited in Claim 64, wherein said particulate materials comprise organic compounds.

83. (Previously Presented) A method as recited in Claim 64, wherein said precursor composition comprises a monomer and said reacted precursor particles comprise a polymer.

84. (Previously Presented) A method as recited in Claim 64, wherein said particulate materials comprise metal alloys.

85. (Previously Presented) A method as recited in Claim 64, wherein said particulate materials comprise metal solder alloys.

86. (Previously Presented) A method as recited in Claim 64, wherein said particulate materials comprise unsupported electrocatalyst materials.

87. (Previously Presented) A method as recited in Claim 64, wherein said particulate materials comprise supported electrocatalyst materials.

88. (Previously Presented) A method as recited in Claim 64, wherein said particulate materials comprise pharmaceutical compositions.

89. (Previously Presented) A method as recited in Claim 64, wherein said particulate materials comprise phosphor compounds.

90. (Previously Presented) A method as recited in Claim 64, wherein said reacted precursor particles have an average particle size of from about 1 nm to about 100 μm.

91. (Previously Presented) A method as recited in Claim 64, wherein said reacted precursor particles have an average particle size of from about 5 nanometers to about 1 μm.

92. (Previously Presented) A method as recited in Claim 64, wherein said reacted precursor particles have an average particle size of from about 0.5 μm to about 10 μm.

93. (Currently Amended) A method for the fabrication of a plurality of particulate materials, comprising the steps of:

a) continuously providing a precursor composition to a reactor, said precursor composition comprising a mixture of at least a first precursor component and a second precursor component to a reactor;

b) continuously reacting said precursor composition in said reactor under at least one reactor condition to form reacted precursor particles; and

c) collecting said reacted precursor particles, wherein the concentration of at least one of said first and second precursor components in said precursor composition is varied in a controlled manner and on a real-time basis such that said reacted precursor particles comprise a first reacted precursor portion at a first time and a second reacted precursor portion at a second time and at least one material property of said first reacted precursor portion is different than said one material property of said second reacted precursor portion.

94. (Previously Presented) A method as recited in Claim 93, wherein said at least one reactor condition is varied on a real-time basis.

95. (Previously Presented) A method as recited in Claim 93, wherein said at least one reactor condition is reactor temperature and said reactor temperature is varied on a real-time basis.

96. (Previously Presented) A method as recited in Claim 93, wherein the concentration of at least one of said first and second precursor components in said precursor composition is varied on a real-time basis at a rate of from about 0.1 weight percent per minute to about 10 weight percent per minute.

97. (Previously Presented) A method as recited in Claim 93, wherein said precursor composition comprises a flowable liquid.

98. (Previously Presented) A method as recited in Claim 93, wherein said precursor composition comprises a flowable liquid and said step of providing a precursor composition comprises dispersing said precursor composition to form dispersed droplets.

99. (Previously Presented) A method as recited in Claim 93, wherein said precursor composition is a substantially dry powder.

100. (Previously Presented) A method as recited in Claim 93, wherein said reactor is a hot wall reactor.

101. (Previously Presented) A method as recited in Claim 93, wherein said reactor is a plasma reactor.

102. (Previously Presented) A method as recited in Claim 93, wherein said reactor is a flame reactor.

103. (Previously Presented) A method as recited in Claim 93, wherein said collecting step comprises collecting said first reacted precursor portion at a first location on a substrate and collecting said second reacted precursor portion at a second location on said substrate.

104. (Previously Presented) A method as recited in Claim 93, further comprising the step of heating said reacted precursor particles after said collecting step.

105. (Previously Presented) A method as recited in Claim 93, wherein said collecting step comprises depositing said reacted precursor on a substrate to form a linear feature comprising said reacted precursor particles and including said first reacted precursor portion and said second reacted precursor portion.

106. (Previously Presented) A method as recited in Claim 93, wherein said

collecting step comprises depositing said particles on a substrate by ejecting said particles through a nozzle.

107. (Previously Presented) A method as recited in Claim 93, wherein said collecting step comprises depositing said particles on a substrate by ejecting said particles through a nozzle onto a continuously moving substrate.

108. (Previously Presented) A method as recited in Claim 93, wherein said reacted precursor particles are composite particles.

109. (Previously Presented) A method as recited in Claim 93, wherein said particulate materials comprise inorganic compounds.

110. (Previously Presented) A method as recited in Claim 93, wherein said particulate materials comprise organic compounds.

111. (Previously Presented) A method as recited in Claim 93, wherein said precursor composition comprises a monomer and said reacted precursor particles comprise a polymer.

112. (Previously Presented) A method as recited in Claim 93, wherein said particulate materials comprise metal alloys.

113. (Previously Presented) A method as recited in Claim 93, wherein said particulate materials comprise metal solder alloys.

114. (Previously Presented) A method as recited in Claim 93, wherein said particulate materials comprise unsupported electrocatalyst materials.

115. (Previously Presented) A method as recited in Claim 93, wherein said particulate materials comprise supported electrocatalyst materials.

116. (Previously Presented) A method as recited in Claim 93, wherein said particulate materials comprise pharmaceutical compositions.

117. (Previously Presented) A method as recited in Claim 93, wherein said particulate materials comprise phosphor compounds.

118. (Previously Presented) A method as recited in Claim 93, wherein said

reacted precursor particles have an average particle size of from about 1 nm to about 100 :m.

119. (Previously Presented) A method as recited in Claim 93, wherein said reacted precursor particles have an average particle size of from about 5 nanometers to about 1 μm.

120. (Previously Presented) A method as recited in Claim 93, wherein said reacted precursor particles have an average particle size of from about 0.5 μm to about 10 μm.

121. (New) A method as recited in Claim 8, wherein said step of generating precursor droplets comprises generating precursor droplets using an ultrasonic transducer.

122. (New) A method as recited in Claim 8, wherein said step of generating precursor droplets comprises generating precursor droplets using a device selected from the group consisting of a single fluid nozzle, a two-fluid nozzle, an ultrasonic nozzle and a rotary atomizer.